Mooring Buoys

Programmatic Biological Evaluation
Mooring Buoys
Version: 13 October 2000

1. Summary of Activity:

a. In all Fresh Waters *excluding* Columbia River mainstem: Placement of mooring buoys for single boat, non-commercial use, provided that: the anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or spawning habitat for listed or proposed fish species, buoys do not exceed 4 per acre, buoys are anchored securely and anchors are installed so that anchor lines do not drag, flotation shall be completely contained to prevent breakup, and the vessel does not ground out at low water. [from NWP 10]

b. In the Columbia River mainstem *including* Snake River and Baker Bay: Placement of mooring buoys for single boat, non-commercial use, provided that: the anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or spawning habitat for listed, proposed or forage fish species, buoys do not exceed 4 per acre, buoys are anchored securely and anchors are installed so that anchor lines do not drag, flotation shall be completely contained to prevent breakup, and the vessel does not ground out at low water. [from NWP 10]

c. In all Marine/Estuarine Waters *excluding* Baker Bay: Placement of mooring buoys for single boat, non-commercial use, provided that: the anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows or spawning habitat for forage species, buoys do not exceed 4 per acre, buoy anchors are installed so that the anchor line does not drag, flotation shall be completely contained to prevent breakup, and the vessel does not ground out at low water. [from NWP 10]

2. Programmatic Description: Individual permits (IPs), letters of permission (LOPs), and Nationwide Permit 10 (NWP 10) may authorize the placement of single-boat, non-commercial use, mooring buoys into navigable waters of the U.S in the State of Washington. This programmatic biological evaluation applies only to such activities. Work that cannot be designed or constructed to fit under this biological evaluation must go through individual informal or formal ESA consultation.

3. Project Location: In all navigable fresh and marine/estuarine waters only in the counties of Washington State where the National Marine Fisheries Service and U.S. Fish and Wildlife Service have concurred that the project is not likely to adversely affect listed fish species and designated critical habitat and will not jeopardize proposed fish species or destroy or adversely modify proposed critical habitat.

4. Project Description: Placement of mooring buoys for single boat, non-commercial use. This programmatic biological evaluation does not cover any interrelated and/or interdependent work activities in any of the designated critical habitat areas, except those activities distinctly specified.

5. Project Construction Description:[1]

a. Equipment used: The buoy is typically 1- to 3-feet in diameter. The buoy is typically a styrofoam ball with a plastic coating and a steel rod going through the center with key holes at the top and bottom for tying the vessel and attaching the anchor chain. Aluminum kegs may also be used as buoys. The anchor is fully cured cement, typically cured in a 5-gallon bucket (1 square foot in size) with a steel rod placed in it. One to 5 anchors of this size will be used to anchor the buoy. The number of anchors used depends on the size of vessel being moored and the strength of the currents in the area. The anchor is attached to the buoy by a nylon rope or chain and rope combination. The line length is based on the "scope" necessary for the location and its currents, averaging a 7:1 ratio of line length to depth. Determination of "scope" can be obtained from the U.S. Coast Guard or local boating association.

b. Access: The buoy location is accessed by a small row boat or dinghy.

c. Placement: The boat is stopped or moving extremely slowly when the anchor is dropped. The anchor is dropped from the boat into the water is placed by hand from a small vessel. The depth for the placement of a mooring buoy is a minimum depth of 15 feet and a maximum depth of 30 feet at high water.

d. Timing: The placement of the mooring buoy can be completed in a matter of minutes. The anchor drops at a rate of 10 feet per second no matter the size.

e. Boat Moorage: Typical length of boats moored at mooring buoys is 22 feet long, with a maximum length of 65 feet. The boat is accessed by a small dinghy stored on the shoreline. Moorage of the boat at the mooring buoy is usually for only 6 months of every year, during the summer and fall when weather is less stormy.

6. Action Area Description: The action area for the installation of a single-boat, non-commercial use, mooring buoy in all navigable fresh or marine/estuarine waters of Washington State includes the buoy, the boat to be moored at the buoy, the length of the chain/nylon rope, the swing of the boat and buoy from the

[1] Information about project construction methods provided by personal communication with John Pell, Navigation Expert, Corps of Engineers, Regulatory Branch, and Eric Winters, Chief of Floating Plan, Corps of Engineers, Navigation Branch on February 16, 2000.

anchor (a radius of 5 feet), the anchor, and 25 feet radius[2] around the anchor for potential water quality impacts due to anchor placement. There is no interrelated and/or interdependent work in any upland or wetland areas that would be considered designated critical habitat.

7. Species and Habitat Information:

a. Species Present: [3]

1. For all Freshwater areas in Washington State, *excluding* the Columbia River mainstem and its tributaries: Puget Sound chinook salmon - status threatened (designated critical habitat); Hood Canal chum salmon - status threatened (designated critical habitat); Coastal/Puget Sound bull trout - status threatened; Ozette Lake sockeye salmon - status threatened (designated critical habitat); SW Washington/Columbia River/Coastal cutthroat trout - proposed threatened; and, Puget Sound coho salmon - candidate species.

2. For the Columbia River mainstem and its tributaries in Washington State, *including* Snake River and Baker Bay: Snake River sockeye salmon - status endangered (designated critical habitat); Snake River spring/summer chinook salmon - status threatened (designated critical habitat); Snake River fall chinook salmon - status threatened (designated critical habitat); Snake River steelhead - status threatened (designated critical habitat); Columbia River chum salmon - status threatened (designated critical habitat); Columbia River bull trout – status threatened; Lower Columbia River steelhead – status threatened (designated critical habitat); Lower Columbia River chinook salmon – status threatened (designated critical habitat); Middle Columbia River steelhead – status threatened (designated critical habitat); Upper Columbia River steelhead – status endangered (designated critical habitat); Upper Columbia River spring chinook salmon – status endangered (designated critical habitat); Upper Willamette River chinook salmon – status threatened (designated critical habitat); Upper Willamette steelhead – status threatened (designated critical habitat); and, SW Washington/Columbia River/Coastal cutthroat trout – proposed threatened.

3. For all Marine/Estuarine Waters in Washington State, *excluding* Baker Bay: Puget Sound chinook salmon, status threatened (designated critical habitat), Hood Canal chum salmon, status threatened (designated critical habitat),

[2] The determination of impact area for potential water quality impacts is based on personal communication with John Malek, Sediment Management, Environmental Protection Agency, on May 10, 2000. Mr. Malek stated that typically turbidity impacts of a pile driving, anchor placement or the like would not exceed a 15-foot radius, a 25-foot radius is the maximum extent of impact, regardless of substrate type and currents at a project site.

[3] Other listed or proposed plants or animals may occur in the project area. However, this document addresses only listed or proposed fish species. Review of impacts to other listed or proposed species will be done on a case-by-case basis.

Coastal/Puget Sound bull trout, status threatened, Ozette Lake sockeye salmon, status threatened (designated critical habitat), SW Washington/Columbia River/Coastal cutthroat trout, proposed threatened, and, Puget Sound coho salmon, candidate species.

b. Species Utilization: Refer to Appendix B - Species Life Histories.

8. Activity History and Status: The following table is a breakdown of the number of Nationwide Permit 10 (NWP 10 – Mooring Buoys) verifications authorized by the Corps of Engineers. The breakdown is organized by year and waterbody. The waterbody includes all creeks, streams, and unnamed tributaries that flow into it. Each of the waterbodies is categorized as below:

a. Marine: All marine waters within Washington State (i.e., Pacific Ocean, Willapa Bay, Grays Harbor, Strait of Juan de Fuca, Strait of Georgia, Puget Sound, Hood Canal, Sammish Bay, Skagit Bay, Totten Inlet, Dabob Bay, Commencement Bay, etc.). Because of the design of the Corps database, it was not possible to separate out tidal areas from the minor freshwater creeks, streams, and unnamed tributaries that flow into these waterbodies.

b. Fresh: All fresh waters within Washington State including all rivers, tributaries, lakes, and reservoirs (regardless of size) and excluding the Columbia River Mainstem. (i.e., Snoqualmie River, Skagit River, Puyallup River, Nisqually River, Cowlitz River, Yakima River, Wenatchee River, Snake River, Pend Oreille River, Lake Washington, Lake Sammamish, Lake Chelan, Moses Lake, Baker Lake, Spanaway Lake, etc).

c. Columbia River: Mainstem Columbia River within Washington State, including the Snake River, Baker Bay, and lakes and reservoirs (i.e. Lake Entiat, Lake Wallula, Franklin D. Roosevelt Lake, Priest Rapids Lake, etc.). Data for all tributaries are included under “fresh water” areas.

To determine the number of authorized mooring buoy verifications, all finalized permit actions were queried against the key word “NWP 10” and cross-referenced with the work type “buoy.” The cross-referencing ensures that the activity is properly categorized and each NWP 10 verification is only counted once. NWP 10 activities do not require “notification” to the Corps, therefore the data set below represents only those activities where the Corps was notified and a verification was actually issued. NWP 10 activities are for Rivers and Harbors Act Section 10 waters only, therefore the data represents activities authorized within navigable waters. The following data also includes before– and, when applicable, after-the-fact authorizations. The most accurate count for mooring buoys is shown in 1998. In 1998, the Corps contacted Washington State Department of Natural Resources (WDNR) to determine how many mooring buoys were authorized by the State. In comparing the Corps database with one

year of data from WDNR (1998), the Corps database represents less than 1 % of the actual number of mooring buoys.

Table 1: Historical Record of Corps Authorization of Mooring Buoys

WATERBODY	1995	1996	1997	1998*	1999
Marine	5	7	3	91	5
Fresh	0	3	0	7	0
Columbia River	0	0	0	0	0
TOTAL	**5**	**10**	**3**	**96**	**5**

* Data for the year 1998 includes 91 buoy verifications supplied to the Corps by the Department of Natural Resources.

Because no notification is required for NWP10, the Corps acknowledges that tracking of mooring buoys has been inconsistent and infrequent. In light of the recent listings under ESA, the Corps proposes to track these activities as outlined in the "Programmatic Biological Evaluation Notification and Tracking Description".

9. Environmental Baseline: Refer to Appendix C - Environmental Baseline.

10. Effects of the Action:

a. Direct Effects: Because the direct effects, whether in marine or freshwater areas, are relatively similar for all the listed or proposed fish species, the effects analysis does not distinguish between waterbody or species type. The mooring buoys are placed at a minimum depth of 15 feet and a maximum depth of 30 feet mean high water. Listed or proposed fish species use at this depth is generally adult migration as juveniles stay closer to shore in the shallow waters. Effects to listed or proposed fish species associated with the placement of mooring buoys in any of the waters of the U.S. in Washington State are outlined below:

1. Water quality (anchor placement): Temporary water quality impacts may occur with the placement of the mooring buoys when the anchor drops and a small amount of sediment is temporarily suspended in the water column. Because the anchor drops in a matter of seconds and settles, sediment suspension is unlikely to exceed a radius of 25 feet from the anchor and would settle out of the water column to background levels in no more than an hour, depending on sediment type and currents. If the anchor is not installed properly or the weight is not sufficient, the anchor may drag along the substrate, causing additional sediment suspension. The Corps' experience is that this is rare. To be covered by this informal programmatic consultation, buoy anchors are installed so that the anchor line does not drag. Using this method of installation, all temporary water quality impacts associated with the anchor placement are insignificant and/or discountable.

2. Water quality (propwash): The boat placing the buoy is likely to cause some sediment suspension associated with propwash. The boat is stopped or moving

extremely slowly during anchor placement so the disturbance with the propwash is extremely minor. Any turbidity associated with propwash would also settle out of the water column to background levels in no more than an hour, depending on sediment type and currents. There may be temporary sediment suspension associated with propwash when the moored vessel leaves and returns to the buoy. Sediment suspension would be similar to that from the boat when the anchor is placed. All temporary water quality impacts are insignificant and/or discountable.

b. Indirect Effects: The effects resulting from the activity that are later in time could include oil or gas spills, disruption of migration, substrate disturbance, and angling pressure.

1. Water quality (contaminants): The operation of the boat may result in an insignificant and discountable amount of oil, gas, and paint leaching into the water. The boats at the mooring buoys are not fueled at the buoy but at fueling docks. Painting of the boats does not occur at the mooring buoy either. TBT, a pesticide, is sometimes found in paint used for boats. TBT is known to leach from the paint and into the water column in both marine/estuarine waters and fresh waters. Since 1998, the State of Washington has banned the use of TBT tainted paint on pleasure vessels. TBT tainted paint is still used on international commercial vessels. This programmatic biological evaluation only covers mooring buoys for non-commercial pleasure craft. The only other chemical of concern in paint is copper. Copper does not leach from the paint into the water column.[4] From regular operation of the vessel there will likely be some small amounts of oil or gas. There is the potential for the boat to be damaged from a storm or other unforeseen activity while moored at the buoy which could result in a greater amount of oil or gas leakage. One of the general implementation conditions of this programmatic biological evaluation requires immediate notification to the State oil spill response team in such an event.

2. Habitat Access: The vessel is typically moored at a depth of 30 feet high water, (around 15 feet low water for marine areas). There is a potential that the vessel, moored for more than 6 months of the year, would cause shading impacts that may disturb migration patterns of listed or proposed fish species, causing them to avoid the structure. At the depth the vessel is moored, only adults of the species would be utilizing the area, as juveniles stay closer into shore. Minor changes to adult migratory patterns of only a few feet (the length of the vessel) would not increase the risk of predation or migration as the adults would still remain within the extent of the main migratory corridor. In addition, no more than 4 buoys with moored vessels will be allowed per acre. Impacts to habitat access are insignificant and/or discountable.

[4] Information on paint contaminants and their effects was obtained from personal communication with Stephanie Stirling, Dredge Materials Management Office, U.S. Army Corps of Engineers on May 9, 2000.

3. Habitat Health (substrate, vegetated shallows, predation): To be covered by this informal programmatic consultation, the buoys will be placed so that the vessel will not ground out during low water, the vessel will not be moored over or adjacent to vegetated shallows, and no more than 4 buoys/vessels will be placed within one acre. Vegetated shallows provide refuge for juvenile salmonids and support forage species that the listed or proposed fish species are dependent upon, such as invertebrates for juvenile salmonids and forage fish for adult salmonids. For example, herring spawn in eelgrass beds in marine areas. Boat activity near or adjacent to vegetated areas has been documented to damage and/or destroy the vegetated areas. (NOAA, 1998) By not allowing the vessel to ground at low water and ensuring that anchor is properly installed with weight is sufficient and the anchor and anchor line will not drag, the buoy and vessel moorage will not destroy the integrity of the substrate or damage or destroy benthic invertebrates that juveniles of the listed or proposed fish species are dependent upon for food. Vegetated shallows provide refuge for juvenile listed or proposed fish and support forage species that the listed or proposed fish species are dependent upon, such as invertebrates or herring spawning in eelgrass beds in marine areas. Since the vessel will not be moored over or adjacent to vegetated shallows, the shading of the vessel or disturbance from propwash will not impair vegetated shallows. Because the vessel is moored on a buoy, the vessel will move around the buoy with the currents, not remain in a fixed position. Since the vessel will be in motion and no more than 4 buoys/vessels are allowed per one acre area, there is no opportunity to create fixed predator habitat via shading. Using this method of installation, impacts to habitat health are insignificant and/or discountable.

4. Predation: Angling from moored boats could occur. This could lead to incidental hooking mortalities to listed or proposed fish species, especially if moorages are located over forage fish spawning areas. To be covered by this informal consultation, the anchor, buoy, and moored vessel are not to be located over or adjacent to (within 300 feet) forage fish spawning areas. In addition, most anglers fish while underway, not while their vessel is moored. Thus, these effects will be insignificant and/or discountable.

c. For all other pathways and indicators not specifically mentioned above, the activity will not alter the present environmental baseline.

d. Determination of Effect: Mooring buoys may affect but are not likely to adversely affect listed fish species and designated critical habitat identified above, and will not jeopardize proposed fish species or destroy or adversely modify proposed critical habitat identified above, provided that:

1. For Fresh Waters *excluding* the Columbia River mainstem:

- The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-

designated noxious weeds) or spawning habitat for listed or proposed fish species.
- Buoys do not exceed 4 per acre.
- Buoy anchors are installed so that the anchor line does not drag.
- Flotation shall be completely contained to prevent breakup.
- The vessel does not ground out at low water.

2. For the Columbia River mainstem *including* Snake River and Baker Bay:
- The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows (except where such vegetation is limited to State-designated noxious weeds) or spawning habitat for listed, proposed or forage fish species.
- Buoys do not exceed 4 per acre.
- Buoy anchors are installed so that the anchor line does not drag.
- Flotation shall be completely contained to prevent breakup.
- The vessel does not ground out at low water.

3. For all Marine/Estuarine Waters *excluding* Baker Bay:
- The anchor, buoy, and moored vessel are not located over or adjacent to vegetated shallows or spawning habitat for forage species.
- Buoys do not exceed 4 per acre.
- Buoy anchors are installed so that the anchor line does not drag.
- Flotation shall be completely contained to prevent breakup.
- The vessel does not ground out at low water.